

Property Taxes and Forests in West Virginia: A Historical Review

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Abstract Managed Timberland Tax Incentive Program (Managed Timberland), the program which authorizes preferential property taxation of forest land in West Virginia, was created in anticipation of expected drastic changes in property assessment values when the state ordered a reassessment to correct a long-standing underassessment problem. Since the enactment of Managed Timberland no detailed research has been conducted to determine the benefits of the policy to the state or to private forest landowners. Managed Timberland has low enrollment rates and may be an unfair shift of the tax burden to non-forest owners. A detailed study of Managed Timberland was conducted to determine the effectiveness of the policy. This study employs a historical review to examine the implication of past tax policies and provide a context and direction for future research and policy recommendations. The historical review reveals that in West Virginia, a preferential tax program for forests is desirable, but requires changes due to a history of inefficient and unfairly distributed property taxes and inadequate benefits from Managed Timberland to forest landowners. Simplification of forest tax policies would make these policies more transparent and understandable to landowners and easier for local tax authorities to administer. In addition, landowners may be more inclined to participate in preferential forest tax programs if program outreach and reward systems were more in keeping with known landowner values and beliefs.

Keywords ad valorem · Nonindustrial private forest (NIPF) landowners · Preferential taxation · Tax shelter

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Introduction

Property taxes have been serving as one potential source of public revenues for many countries. In fact, in previous centuries, property taxes were the most important source of tax revenues for both the national and local government (FAO 2002). Property taxes including wealth taxes account for more than 10% of the total taxes in United Kingdom, USA, Canada, Japan and Korea. Property taxes have experienced a long-term decline in relative importance in many countries; however, it is likely that the demand for property tax revenues will increase as governments face increasing public demands and expectations for services (FAO 2002).

Ad valorem taxation, which is based on the fair market value of the property, is generally applied to taxation of real estate or personal property. Many countries have applied this taxation system because of its benefits such as transparency, low administrative cost, and ease of understanding by the tax-paying public (FAO 2002). For example, even in economies of transition in Central and Eastern Europe, ad valorem taxation is being implemented or being considered for implementation. Estonia and Latvia have implemented this system while Armenia, Czech Republic, Poland, the Russian Federation, Hungary and Slovenia are planning to move to or seriously considering ad valorem taxation (World Bank 2001).

In the USA, property taxation is also generally based on ad valorem tax. However, a modified version (i.e., preferential taxation) is being applied to forest land, and has been adopted in all 50 states (Hibbard et al. 2003). Various individual states have conducted studies on both the structure and effectiveness of their programs (e.g., Rathke 1993; Jacobson 2001; Wagner et al. 2002; Baughman et al. 2001). However, West Virginia's forest tax incentive program, called Managed Timberland Tax Incentive Program (Managed Timberland), has not been scrutinized at the level of other states' forest tax incentive programs. Implications of this tax policy on private forest landowners' decisions may be significant. Privately owned forestland in West Virginia accounts for 83% of the total forest land in the state (White 1993). West Virginia has approximately 260,000 nonindustrial private forest landowners, who hold 3.9 M ha of forest land (USDA Forest Service 2007). The West Virginia Managed Timberland area has remained stable at just under 1 M ha since 1998 (Dye 2006). The lack of enrollment in West Virginia's Managed Timberland program since 1998 (Dye 2006) may be a cause for concern regarding the success of the policy.

This paper presents a historical review of West Virginia's Managed Timberland Program and taxation policies. Specifically, the literature on the development of forest property taxation policies in West Virginia from the late 1800s up to the time the Managed Timberland program was introduced in the 1990s is examined. Reviewing the implications of past policies can foster an understanding and create a context within which informed policy implications for policy improvements and future research can be drawn. A historical review of West Virginia's Managed Timberland program as related to forest land can provide relevant information for a more detailed study of the policy, especially as it relates to private forest landowners. Landowner perceptions of the policy today can be evaluated within the framework of the state's forest tax policy history.

Birth of Property Taxes

Property taxes are as old as civilization. The earliest known property tax records are clay tablets from Lagesh, a former city-state in what is now Iraq, from around 6000 BC (Carlson 2005). Early property taxes were in the form of a percentage of production from the land, usually food, but the ancient empires with a system of currency used value assessments and collected money for property taxes. The property tax regime in place today, with a system of appraisal records and a percentage of the assessed value of the property payable, dates to post-medieval Europe, and was developed by William the Conqueror, whose tax records were known as the Doomsday Book (Carlson 2005). The puritans of Massachusetts used a property tax system to generate revenue for public works, education, and even welfare (Carlson 2005). The property tax in North America as carried over from Europe was implemented because land ownership was seen as a reliable measure of one's ability to pay (Bjork 1980). When the USA was formed, the constitution barred tax on income and the concept of an annual income tax was not common. In recent times, the property tax has been increasingly viewed as regressive, with the largest portion of the tax burden falling on those least able to pay (The Appalachian Land Ownership Task Force 1983; Hibbard et al. 2001).

Forest Land Use Policy

The historical pattern of how property law in the USA has encouraged timber exploitation is an American phenomenon. The British common law had evolved into one favoring conservation, because by the 1700s, Britain's forest supply was already threatened (Sprankling 1996). Prior to the American Revolution, the British government actively discouraged settlement west of the Allegheny Mountains and implemented policies designed to protect the timber supply of the colonies from exploitation because the vast forests were seen as a valuable reserve for the British Navy (Sprankling 1996). The infant USA similarly viewed the vast forest wilderness as a government resource that could finance the new country's debt, and so a policy of cash-only land purchase from the government was maintained with laws prohibiting squatting on frontier land.

The expansion of the USA with the Louisiana Purchase in 1803 helped to change this governmental policy view into one in which the wilderness considered a hindrance to progress that had to be tamed and land was seen as inexpensive and plentiful (Sprankling 1996). The passage of the *Homestead Act* in 1862 sealed the fate of the western wilderness. Common property law, which is formed by court precedent, favoured agrarian and developed land uses. Court decisions on land disputes favoured the party that made 'improvements', which is to say the claimant had harvested timber, plowed fields or erected buildings, regardless of legal holder of title. Federal and state policies also contributed to resource depletion, with much of the timber in the Northeast and upper Midwest being tax exempt (Hibbard et al. 2001). This tax exemption was presumed to be a conservation effort due to

predicted timber shortages, but in reality it acted as a tax shield for land speculators to buy timber resources, log them quickly and move on.

The different economic preferences of the north and south prior to the American Civil War also contributed to faster timber resource depletion in the north. In the north, property tax was the preferred form of gathering government revenue, but the plantation economy of the south, with its politically powerful owning vast amounts of property both in land and slaves, preferred to avoid property taxes and favored poll taxes (a head count tax) and fees to collect government revenue (Carlson 2005). This difference in attitude toward land ownership patterns and property taxation was a contributing factor in the strife between eastern and western Virginians, which eventually would lead to the secession of West Virginia (Rasmussen 1994).

The Influence of the Fairchild Report on Preferential Taxation

By the beginning of the 1900s, the forests of the Northeast and Midwest were almost gone. Future timber supply was a growing policy concern. In the Northeast, this problem was recognized early with Connecticut being the first state to attempt to pass a preferential forest tax law, in 1817 (Fairchild 1935). Yale economist, Fred Fairchild, completed his study of the effects of ad valorem property taxes on forestry investment in 1935. He concluded that ad valorem property taxation of forests encouraged premature harvesting, acted as a disincentive for reforestation efforts, and encouraged conversion of forest land to developed uses (Colligan 2001). These findings and numerous subsequent studies are the basis on which preferential forest property tax policy is validated (Klemperer 1977). Maryland was the first state to pass a modern preferential forest property tax law in recognition of the Fairchild findings in 1956 (Dunford 1980). The major reason behind the delay in recognition of property taxes as a problem for encouraging forest investment and state implementation of policy to address the problem was that many states had to add amendments to their constitutions to authorize their legislatures to extend property tax breaks to forest landowners because of equal protection clauses contained in the financial articles within their state constitutions (Malme 1993).

Tax Policy in West Virginia

The timetable of the history of West Virginia's property taxation is presented in Table 1. The economic and political background of West Virginia was dominated by two classes, large landholding speculators and small landholding mountain farmers (Rasmussen 1994). The east and west of old Virginia held opposing views of public finance ideals. Western Virginians desired higher property taxes to fund public improvements and encourage development, while eastern Virginians preferred low property taxes due to the plantation economy and large speculative landholdings in the western part of the state (Rasmussen 1994). Local leaders in western Virginia contributed to the western finance problem further by creating misguided policies such as exempting coal and timber from taxes in an attempt to

Table 1 Timetable of events in West Virginia's property tax policies

Year	Event
1863	WV becomes a state
	Timber is already exempt under pre-existing Virginia law
1872	Constitutional amendment permits taxation of corporate wealth
1875	Economic depression year prompts agricultural exemptions
1882	State treasury shortages
	WV Supreme court declares tax exemptions unconstitutional
	Governor Jackson orders statewide appraisal
1904	Law enacted requiring all property be taxed at true and actual value
1932	Taxes at \$2.65/\$100 causing high land forfeiture rates
	Public schools close due to lack of funds
1933	Tax Limitation Amendment passed
1935	Fairchild and Associates complete forest tax study
1946	Forestry Amendment passed
1948	Besley's WV forest tax study completed
1954	Governor Marland's tax commission committee report presented
1958	Statewide reassessment begins
1967	End of statewide reassessment.
1982	Two court cases, Pauly v. Bailey, and Killen v. Logan County Commission, on unequal taxation
	Tax Limitation and Homestead Exemption Amendment passed
	Statewide reappraisal conducted
1984	Legislature fails to ratify 1982 appraisal
1990	House Bill 4127 introduces Managed Timberland
1991	Managed Timberland goes into effect on July 1

encourage development. After the Civil War, the new state of West Virginia was dominated by absentee speculative landholdings, with the smaller mountain farmers bearing the tax burden for state and local funding (Rasmussen 1994). By 1884, the new state's tax commission recognized that absentee speculators foreshadowed economic disaster, stating that 'A state is prosperous if property is owned by its citizens'.

Citizens of the new state of West Virginia were already grumbling about corporate tax exemptions, especially railroads, prompting the 1872 constitutional provision that permitted taxation of corporate wealth (Ambler and Summers 1958). Specific agricultural products were granted tax exemption in 1875, an economic depression year, which led to state fund shortages (Ambler and Summers 1958). In 1882, the West Virginia Supreme Court ruled that all exemptions were unconstitutional under the West Virginia constitution and Governor Jackson ordered a statewide assessment and compliance with the court's decision, but most assessors did not comply.

The West Virginia constitution was essentially a copy of Virginia's, as the state was born in war and need was immediate, which led to the tax policies of Virginia

being carried over to the new state, with the only change being the prohibition of slavery (Davis et al. 1963). There was little change in the mode of government finance and the property tax system remained in place until Governor White began his term in 1900 (Davis et al. 1963). This is not to say that there were no problems with the property tax system during the period between achievement of statehood and Governor White's campaign, which was run on a platform of tax reform (Rice 1985).

Governor White, true to his campaign promise, formulated a tax review committee, which set forth the recommendation that state and local revenue be separated, with property taxes reserved for local government revenue (Rice 1985). In 1904, the legislature mandated that all real and personal property be assessed at its market value and allowed no exemptions except property for religious entities and for education (Ambler and Summers 1958). West Virginians still paid a small property tax, but World War I brought a proportionally large increase as evidenced by comparing the 1913 average tax rate of \$0.01/\$100 value to the 1915 average of \$0.15/\$100 value (Davis et al. 1963). The post World War I period saw an increase in demand for roads, construction, and education, which was locally financed by increases in the property tax. By 1932, the state was in a financial crisis. With the onset of the Great Depression, and the average property tax at \$2.65/\$100 assessed value, land forfeiture rates were large and public schools were forced to close due to lack of funds (Ambler and Summers 1958).

To relieve landowners from forced forfeiture, the *Tax Limitation Amendment* of 1933 was passed, which created four property classes with low capped assessments per \$100 of value, with a provision that counties may levy excess taxes if approved by referendum vote, and allowed the state to levy an income tax to generate revenue (Davis et al. 1963). This classification system is the oldest of such systems in the USA, and has never been changed since 1933 when it was passed (Bowman 1984; WV State Tax Department 2000). With this sharp cut in revenue, local governments in West Virginia were forced to rely on state funds, and the state in turn made itself obligated to provide the financial assistance to local governments so they could continue to provide the state's citizens with needed services. In 1954, Governor Marland created a commission to analyze state and local finance. The commission's report stated of the property tax system that 'property is valued erratically, taxed lightly, and the burden is distributed unevenly' (Davis et al. 1963, p. 188). In 1958, the legislature ordered a re-evaluation of all property, except utilities (Davis et al. 1963), which was conducted from 1958 to 1967 (White 1991).

In 1982, with underassessment having continued to be a problem since the 1930s, two court decisions—*Pauly v. Bailey* and *Killen v. Logan County Commission*—brought the property tax issue to the legislative floor. In both cases, the courts ruled that tax rates were inequitable, as evidenced by such disparities as class II property comprising 21.23% of West Virginia land value, but only paying 12.97% of the property tax. The courts ordered immediate remedial action (Bowman 1984). The same year, legislature again ordered a reassessment under the *Tax Limitation and Homestead Exemption Amendment* (White 1991). The reassessment was conducted, at a cost of \$35 M, but the new values were never implemented, due to failure of the legislature to ratify them during the 1984 session (Colyer and Ferrise 1991). As a

consequence, many properties in West Virginia as of 1991 were still taxed according to values from the 1958 to 1967 reassessment (White 1991). House Bill 4127 introduced and passed in 1990, again ordered a reappraisal, giving assessors 3 years to complete it, and ordering a reappraisal every 3 years thereafter (Colyer and Ferrise 1991). However, even reappraised properties in neighboring counties and of the same type were vastly different, with some landowners reporting two similar parcels with assessments of \$20 in one county and \$100 in another, though they were the same size (White 1991). A recent survey of landowners conducted by Fortney and Arano (2009) also indicates that this problem has persisted in the current Managed Timberland program.

By 1993, the average statewide tax rate had declined from \$2.27 per \$100 of assessed value in 1990 to \$2.15, and continued to decline in subsequent years (WV State Tax Department 1979–1995). This rate decline is typical when long periods pass between appraisals (Bowman 1984). What is often forgotten when using Fairchild's findings is that he not only concluded that the property tax is biased against forestry, but also that the local administration of the property tax is inefficient and local assessors are usually unqualified individuals. He also specifically mentioned that use of the local sheriff as a tax collector, as is the case in West Virginia, is not a practical form of tax administration, because the sheriff is an elected official, politically motivated and already burdened with the other duties of his office. Fairchild strongly recommended against this form of local assessment and collection. Though West Virginia has attempted to correct the underassessment problem through orders for reappraisal, this does not directly address the root of the problem, according to Fairchild's assessment of the issue.

Managed Timberland Tax Incentive Program as a Preferential Tax System

The pre-Civil War absentee landowners of Virginia enjoyed tax exempt status for the standing timber they owned, though not the land (Rasmussen 1994). The West Virginia Supreme Court ruling of 1882 found such exemptions to be unconstitutional, and the 1904 tax reforms allowed no such exemption (Ambler and Summers 1958). By 1909, West Virginia reached the peak of its timber production, and after World War I timber production was in steady decline. The passage of the *Clark-McNary Act* of 1924 and subsequent research including the Fairchild report indicated that new policies for forest taxation were needed (Hibbard et al. 2001). Besley (1948) reviewed forest taxes in West Virginia for the years 1939–1941, and found that for the state as a whole, non-farm forests were assessed at approximately 102% of their full value, but farm forests were assessed at only 74% of their full value. The *Forestry Amendment* was added to the West Virginia Constitution in 1946, allowing exemption or special treatment of land used for forestry in property tax assessments (Colyer and Ferrise 1991). However, adoption of a policy instrument to implement use value on forested land was not considered a pressing issue because property tax assessments were already low due to an overall underassessment problem (White 1987).

After the failure of the 1982 reassessment, House Bill 4127, in 1990, again tried to address the underassessment issue and, in anticipation of increased value of appraisals, introduced the state of West Virginia to the use value assessment for forestry in the form of Managed Timberland (Colyer and Ferrise 1991).

The West Virginia Managed Timberland Tax Incentive Program is administered by the state local tax assessors with the state Division of Forestry serving an advisory role, and uses current use valuation, has a minimum productivity requirement, and requires that the landowner have an active written management plan in order to receive the preferential tax treatment (Malme 1993; WV Code §11). West Virginia defines timberland and managed timberland as two distinct categories. Title 110, West Virginia Legislative Rule, Department of Tax and Revenue, defines timberland as '...any surface real property, except farm woodlots of not less than ten contiguous acres, which is primarily forest and which has, in consideration of their size, sufficient numbers of commercially valuable species of trees to constitute at least 40% normal stocking of forest trees, ... which are well distributed over the growing site. Additionally, land that has been recently harvested of merchantable timber and is growing into or being planted as a new forest may be classified as timberland' (WV §110-1H-3.20). The definition of managed timberland is the same with the exception that the legislation continues with '...and that it is managed pursuant to a plan' (WV §110-1H-3.10). Title 110 also specifies that timberland shall be appraised by a comparable sales approach at market value and assessed at 60% and that managed timberland shall be appraised based on the potential of the land to produce income based on a discounted future net income which is determined by the site index (WV §110-1H-2). For owners participating in the program, forest land is therefore assessed at a lower value than other property classes except farm land. In compliance with the 1946 constitutional amendment, the legislation also requires that the landowner enter into a contract with the state Division of Forestry, which specifies that the land is being used in a timber management program that employs erosion control and best management practices, and that enhances the growth of commercially desirable species (WV §110-1H-13). A professionally prepared forest management plan is required and must include the owner's objectives and provisions for 40% or greater stocking, continuous crops of timber, protection against threats, forest regeneration, and compliance with the *Logging Sediment Control Act* (WV §110-1H-3.11 and WV §110-1H-13). Currently, the only penalty in West Virginia for change of land use is decertification from the program, and the penalty for failure to comply with requirements of the program is a fine equal to lost property taxes from the time of non-compliance to decertification plus a 9% interest rate (WV §11-1C-11a(c)). No roll-back taxes are currently employed in West Virginia (Malme 1993; WV §11-1C-11a). Some abuse of the program has been investors are using Managed Timberland as a tax shield on large tracts and selling land in lots, prompting the suggestion of implementation of a roll-back penalty (Dye 2006).

Potential Benefits of Preferential Forest Property Taxation

The foundation of the problem with ad valorem forest property taxation can be found in the nature of compound interest and the discount rate. Large amounts of

up-front investment and long intervals of time are required to reforest denuded land, during which an annual property tax payment is due, but the landowner can realize no income on the property until the timber is of harvestable age. The annual tax and the discounted deferred income leads to a higher tax ratio for forest owners with immature stands compared with those who obtain annual benefits from their land. That is, most sources of income from the land occur more or less regularly within a year (e.g., agricultural crops) making this annual income more in harmony with the annual demand for tax payment (Marquis 1939). The principal deterrent cost owners of immature timber face is the interest cost of being forced to hold their capital for a number of years, or the opportunity cost of capital. The principle of preferential forest tax treatment, then, is to influence landowner forest management behaviour toward socially desirable practices by reducing this opportunity cost. Because ad valorem forest taxation is an inequitable system compared to ad valorem taxation of other land uses, bringing the tax to a more equitable level could promote better forest management practices, promote interest in sustained yield forestry and remove part of the disincentive to reforest cutover land (Fairchild 1935; Hall 1935).

Recent studies have affirmed the findings of the Fairchild report, with NIPF landowners reporting property taxes as an important influence on their decisions to harvest timber, and sell or subdivide and develop land (Rathke 1993; Jacobson 2001; Hibbard et al. 2001, 2003). Klemperer (1977) and Miller and Rose (1985) also argued that ad valorem taxation is not non-neutral in land allocation decisions and is decidedly biased against forestry and agricultural land uses.

Managed Timberland may correct market failures arising from positive externalities from owning timberland. Forest use taxes shift the tax burden from the provider of scenery and open space to the enjoyer of these amenities (Seldon 1981). Forestry is suited to this region both environmentally and economically, for timber and recreational tourism. Peck (1929) and Eke (1929) stated that West Virginia's soil and topography are better suited to forestry than for any other endeavor. More recent environmental concerns are addressed in that forest use valuation also provides an incentive to return the land to forested use in surface mine reclamation (Probert 1999).

Potential Problems with Preferential Forest Property Taxation

Some studies have shown that forest use valuation is inefficient, with low benefits and high administration costs (Hyde et al. 1987). The West Virginia Department of Taxation reported in 2000 that Managed Timberland caused a \$2.6 billion loss in property tax revenue per year. This figure reflects only costs to the state, and research to find a value for benefits is needed to make this number meaningful.

A study in Pennsylvania found that most NIPF landowners are not interested in timber harvest and the forest management efforts of those enrolled in the forest tax program do not differ from those not in the program (Jacobson 2001). Brockett and Gebhard (1999) found no difference in forest management behaviour between participants and non-participants in Tennessee's preferential forest tax program. Clendening and Stier (2002) concluded that forest tax incentives have limited appeal to those who are targeted while developers abuse the preferential tax shelter

for land speculation. They also found unintentional disincentives inherent in the tax policies, such as private landowners destructively harvesting prior to enrollment, converting forests to pasture and enrolling in farmland programs because of larger tax breaks, using the program as a tax shelter prior to development, and subdividing and developing portions of property while retaining the remainder in the forest tax program. Hibbard et al. (2003) reported in a nationwide review that forest tax policies only modestly achieve policy objectives. Many studies have also concluded that forest tax incentives only delay and do not prevent conversion of forest land to developed uses (e.g., Dunford 1980; Malme 1993; Jacobson 2001; England 2002).

An overwhelming criticism is that penalties for withdrawal or land-use change are too low or nonexistent, encouraging use of these preferential tax programs as tax shelters by land speculators (Dunford 1980; Dye 2006). While Dye (2006) wrote favourably of the Managed Timberland's intention and stated that sustainable forestry is encouraged by the policy, he admitted that the program has been used as a tax shelter by land speculators. Jacobson (2001) found this to be a problem with Pennsylvania's Clean and Green program, as well.

Discussion and Conclusions

A historical examination of the property tax in West Virginia reveals that there are problems not directly addressed by corrective policies used by the state. In West Virginia, the problem was that small farmers have carried the bulk of the tax burden while large tracts of speculator land were exempt or under assessed, which led to financially handicapped governments, and hefty tax burdens on local citizens. The *Tax Limitation Amendment* was meant to correct this problem, but the low rate caps have made the local governments more dependent on state financial assistance and have resulted in every county voting in excess taxes and school bond levies (Bowman 1984). In the 1980s, local assessors appear to have adjusted the trend of heavier burdens on local landowners themselves, as non-resident large tract holders were taxed more heavily, with in-county residents paying \$0.34/ha, in-state out-of-county residents paying \$0.65/ha, and out-of-state residents paying \$0.61/ha, on average (Appalachian Land Ownership Task Force 1983). However, a recent study by Fortney and Arano (2009) found that in-state residents are now paying a higher average rate of tax at \$3.57/ha than out-of-state residents that own West Virginia forest land who are paying \$2.78/ha on average. This does not resolve the inequitable distribution of property taxes. Moreover, this highlights the argument of Fairchild that local tax assessors are inefficient administrators of the property tax.

Both Fairchild (1935) and Bowman (1984) have argued for a more centralized tax and accounting system. The court decisions in 1982 made clear that the state tax commissioner was the ultimate tax authority in West Virginia, but at the local level, assessor behaviour appears to remain unaffected. West Virginia has a state equalization board, but an equalization board cannot correct an assessment problem if the underlying appraisal is inaccurate (Fairchild 1935), which is likely given the findings of disparate assessments by White (1991), Bowman (1984) and The Appalachian Land Ownership Task Force (1983).

Several studies (e.g., Bjork 1980; Appalachian Land Ownership Task Force 1983; Rasmussen 1994) reveal that the property tax, particularly in Appalachia, is regressive. For example, in 1983, 52% of Appalachian land owners that held less than 100 ha paid more than \$0.40 per hectare while only 23% that held more than 400 hectares paid as much (Appalachian Land Ownership Task Force 1983). In the past, West Virginia forest landowners were characterized by lower income categories, with 51% of them having annual incomes below \$10,000 in 1975 (Birch and Kingsley 1978). However, a recent study of West Virginia forest land owners shows that the income distribution has changed, with only 9.6% having incomes below \$20,000 in 2005 (Joshi 2007). This implies that a policy that shifts the tax burden in any way may not be wise. Due to other forms of wealth such as stocks, property ownership is not any longer always an indication of an individual's wealth or ability pay (Bjork 1980). With the shift in landowner demographics toward individuals with higher incomes and reasons for forest ownership shifting from commercial timber production to environmental amenities, a concern of policies such as West Virginia's Managed Timberland Program is that society is placing a tax burden on those unable to afford to buy or keep forest land.

An important question to address is how much of a landowner's decision to practice managed forestry is based on taxes. It has been demonstrated that taxes affect land-use allocation (Klempener 1977; Bjork 1980; Miller and Rose 1985). However, it has also been demonstrated that landowners receiving tax breaks do not manage their land in a way that is different from landowners not benefiting from preferential forest taxes (Brockett and Gebhard 1999, Kilgore et al. 2007). Preliminary findings of the study by Fortney and Arano (2009) indicate that West Virginia landowners admit that taxes have little impact on their forest land-use decisions. The question therefore remains if these preferential tax treatment programs provide enough incentives for landowners to manage or maintain their land in forestry use. There has been evidence that even with the existence of preferential tax treatments (e.g., West Virginia's Managed Timberland program), property taxes still remain a major burden for private forest landowners. A recent study by Cushing (2006) examined the impacts of several types of taxes (e.g., property, severance, yield and income taxes) on private land values (i.e., land expectation values) in 22 states in the USA. Her findings show that private land values in West Virginia were reduced by as much as 33% as a result of property taxes even with the existence of the Managed Timberland program. This reduction in land value can be significant considering that West Virginia along with Minnesota, Maine, and Wisconsin had the lowest land values already due to low harvest volumes on an uneven-aged management system (Cushing 2006). An important implication of this is that the tax policy may not provide sufficient incentives for landowners to maintain their land in forest use and therefore prevent conversion to other uses. While this type of preferential tax policy may have corrected a basic inequity in the ad valorem tax, it does not appear to be adequate for addressing urban sprawl and forest fragmentation. Fortney and Arano's (2009) preliminary analysis of property tax rates of Managed Timberland participants and nonparticipants reveals that the average tax per hectare is only slightly less for participants and not statistically different. The average of participants' taxes per

hectare is skewed upward by large taxes per hectare from only four counties, all of which are in high-development areas. It is possible that landowner decisions are influenced more by the high income potential associated with selling land than how much they pay in property taxes whether they are enrolled in a forest tax program or not.

Simplification of forest tax policies would make them more transparent and understandable to landowners and easier for local tax authorities to administer. Landowners may be more inclined to participate in preferential forest tax programs if program outreach and reward systems are more in keeping with known private landowner values and beliefs. Because property taxes are not the only disincentive to land retention that private landowners face, introducing other complementary programs may be advisable (Fairchild 1935; Jacobson and McDill 2003). In addition, reducing the tax burden in states with long forestry rotations including West Virginia may be necessary because growth rates in these states are lower but tax burdens are high relative to the income produced (Cushing 2006). These measures may provide a greater incentive for landowners to invest in forestry.

Further research is being conducted by the authors regarding West Virginia's Managed Timberland Program, specifically examining landowner attitudes toward property taxes and how taxes and participation in the program affect their land-use decisions. This historical review provides a context in which the results of the continuing study can be examined. In addition, to provide a complete picture of the impacts of the state's current forest tax program, future research is needed on welfare effects and tax assessor knowledge and attitudes, as has been carried out in other states (e.g., Hyde et al. 1987; Rathke 1993; Jacobson and McDill 2003).

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